From Drills to Skills: Students' Assessment of School-Based Emergency Drills and their Emergency Preparedness

A Research Paper Presented to

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Practical Research 2

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Chapter 1

INTRODUCTION

Background of the Study

In the past five years, the Philippines ranked first from 193 countries on the list in the World Risk Report 2026 scoring a 46.69 out of 100, which indicates the high risk and low resilience to natural disasters (Bündnis Entwicklung Hilft & IFHV, 2026). The vulnerability to natural disasters is largely attributed to its position on the Pacific Ring of Fire and in the western North Pacific typhoon basin. PAGASA reported an average of 20 tropical cyclones or typhoons entering the Philippine Area of Responsibility (PAGASA, n.d.). Because of the high risk to natural hazards, NDRRMC is mandated to lead the Philippine government's disaster risk reduction and management functions through RA No. 10121 (2010).

The National Disaster Risk Reduction and Management Council's (NDRRMC) statutory functions of establishing a system that deals with natural hazards and man-made and technological hazards (Republic Act No. 10121, 2010) are further supported by the record of the Department of Education (DepEd) over the years – indicates the continuing threat of these hazards, with 15,662 schools in the country having encountered fire incidents from School Year 20092010 to School Year 20172018 (DepEd, 2019). Student safety and wellbeing are also a continuing issue considering violence and other safety concerns within schools. It has become a concern within the educational landscape to take measures that will ensure student

safety and reduce hazards and risks, including organizing school-based emergency preparedness drills that guide learners through safety and emergency response procedures.

Via institutional collaboration, schools have implemented several protocols and simulation exercises to improve emergency preparedness. Among these are emergency drills that have a special importance since students are given the opportunity to practice safety procedures before experiencing an actual emergency.

But, the mere fact that these exercises are routinely held does not tell us how valuable they are. Perhaps a student would be well versed in the particular protocols required to evacuate but even so, may be unsure how to behave if the situation is different from that worked on. The exercises are repetitions so that appropriate responses are more available to action in an emergency.There is, however, another possibility. When drills become sufficiently familiar, students may begin to regard them as ordinary school activities, carrying out instructions without giving much thought to their purpose. Repetition may strengthen a response, however, it may also diminish the attention with which that response is performed. Whether this occurs in school-based emergency drills cannot simply be assumed; it must be examined in relation to students' actual experiences and perceptions. The question, therefore, is not merely whether drills are conducted, but what students come to understand through them.

A comparable comparison may be found in the evaluation of institutional readiness. Finishing mandated procedures can show that the proper criteria have been met, but it can't automatically mean that students feel able to react appropriately in any set of circumstances. Administered procedures and perceived competence are relevantly, if not completely, different issues. The former, arguably relates to the application of pre-existing mechanisms, while the latter is about how ready the students feel themselves to be in the face of possible threats. To blur the difference risks assuming that the presence of certain measures is all the justification required for them, while failing to properly appreciate that students' subjective perceptions may be very different.

This is the concern that will be addressed in the present descriptive-correlational study. The present study will try to determine whether a correlation exists between students' evaluations of emergency preparedness drills and their perceptions of their own emergency preparedness. Although, performing emergency drills may help students' exposure to existing safety protocols and plans, it is still unclear to what degree students' perceptions of these drills are indicative of their perceived level of emergency preparedness. By examining these two components of school emergency preparedness, the present study will attempt to contextualize students' evaluation of preparedness drills within their overall perceived level of emergency preparedness.

Statement of the Problem

This study aims to determine the relationship between students' assessment of school-based emergency drills and their emergency preparedness among Senior High School students. Specifically, it seeks to answer the following questions:

1. What is the level of Senior High School students' assessment of school-based emergency drills in terms of:
    1.1. clarity of instructions;
    1.2. organization and implementation;
    1.3. realism of the drills; and
    1.4. perceived usefulness?
2. What is the level of Senior High School students' emergency preparedness in terms of:
    2.1. knowledge of emergency procedures;
    2.2. awareness of appropriate protective actions;
    2.3. confidence in responding to emergencies; and
    2.4. perceived readiness to respond?
3. Is there a significant relationship between Senior High School students' assessment of school-based emergency drills and their emergency preparedness?

Hypothesis

From the presented problems, the null hypothesis was formed:

There is no significant relationship between Senior High School students' assessment of school-based emergency drills and their emergency preparedness.

Theoretical Framework

The study is based on the Experiential Learning Theory propounded by David A. Kolb (1984) and Social Cognitive Theory by Albert Bandura (1986). Experiential Learning Theory suggests that learning is the process whereby knowledge is created through the transformation of experience. Kolb explains learning to be a process whereby knowledge is developed through the transformation of experience by way of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984).

Kolb's experiential theory states that "experience is the source of all learning and development". School emergency drills allow students to have direct experiences of performing safety procedures and practicing respond-to-emergency procedures. While Bandura's Social Cognitive Theory postulates that knowledge is acquired by observation of others and direct experiences (Bandura, 1986), students may learn emergency procedures by observing and practicing them during emergency drills because of this increase their confidence when responding to future emergencies.

These theories allow better insight on the relationship between students' evaluation of school-based emergency drills and their willingness to prepare for emergencies. Students may rate drills more positively and rate themselves as better able to respond to emergencies. This study will only identify whether a positive relationship exists between the two variables using a correlational research design.

Conceptual Framework

This study utilizes the Independent Variable-Dependent Variable (IV-DV) Model to examine the relationship between Senior High School students' assessment of school-based emergency drills and their emergency preparedness. Anchored on Kolb's Experiential Learning Theory (1984) and Bandura's Social Cognitive Theory (1986), the framework explains how students' evaluations of emergency drills may be associated with their readiness to respond to emergency situations. In this study, the independent variable is the students' assessment of school-based emergency drills, which refers to their evaluation of the drills' organization, clarity of instructions, realism, and perceived usefulness. Meanwhile, the dependent variable is the students' emergency preparedness, which refers to their knowledge of emergency procedures, confidence in responding, and readiness to perform appropriate protective actions during emergencies.

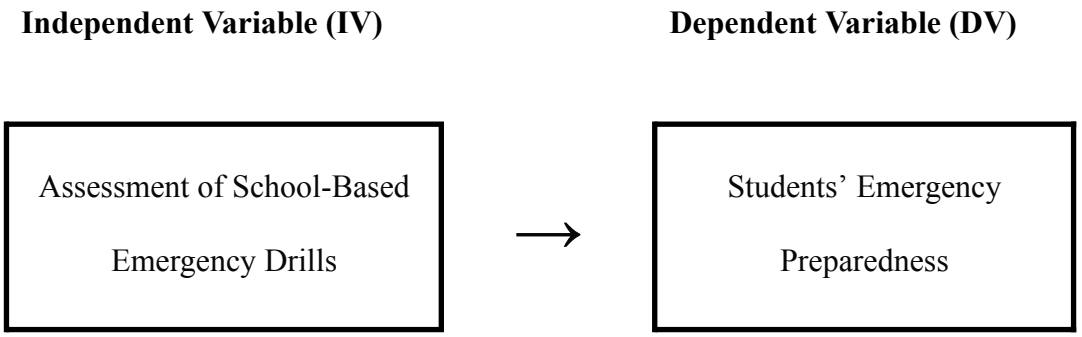


Figure 1: The Conceptual Framework represents the study that depicts the Independent variable and the Dependent variable.

Significance of the Study

The findings of this research offer valuable insights to the following stakeholders:

Students. This study will help Senior High School learners to appreciate the importance and engage in taking School-Based emergency drills seriously to prevent and to protect themselves in times of contingency. The more serious they take the exercises, the better hold they will have on emergency protocols and the more prepared they will be.

Teachers. Through this, it will be known how prepared students truly are for emergencies. It will be a reminder to class advisers to continually emphasize the importance of safety training in class, for them to have a closer and more practical integration of both principles and actual application, and make their students prepared both physically and mentally.

School Disaster Risk Reduction and Management (SDRRM) Coordinators. This study will assist them to determine whether the designed and repeated drills conducted in schools are translating into actual student preparedness and how these drills can be improved to update security procedures, improve the material for the drill, diversify the scenarios and conduct more extensive disaster training.

School Administrators. The findings of this research will provide the evidence-based data school principals and administrators need to assess the implementation of both national and local emergency management mandates. In this way, the data can inform decisions about the expenditure of budget for rescue gear, first-aid supplies, and the safety procedures practiced throughout the institution.

Future Researchers. This study will act as a guide to future researchers for the relationship between institutional safety programs and behavioral readiness of students. Future researchers may use the findings and setup of this study to investigate other related areas, design disaster risk reduction indicators and other researches.

Scope and Delimitations of the Study

This study aims to determine the relationship between students' assessment of school-based emergency drills and their emergency preparedness among Senior High School students. It will focus on students' assessment of emergency drills and their readiness to respond to emergency situations. Data will be collected through a survey

questionnaire using Google Forms and analyzed using a descriptive-correlational research design. However, the study will be limited to selected Senior High School students of Boracay National High School and their self-reported responses. It will not measure their actual performance during real emergencies or evaluate the overall effectiveness of the school's disaster management programs.

Definition of Terms

To help readers understand the meaning and concepts used in this study, the following terms were defined operationally:

Assessment. In this study pertains to the measurement of students perception and experience about the efficacy of school-based emergency drills.

Emergency Drills. In this study, pertains to emergency exercises implemented in schools to make the students related ready for emergencies, including earthquake, fire, and any other emergencies.

Emergency Preparedness. In this study, pertains to the perceived readiness level of the Senior High School students to act properly in case of emergencies, particularly their awareness of the safety protocol and evacuation process.

School-Based Disaster Drills. In this study, these refer to emergency preparedness exercises conducted within the school to teach students the proper actions to take during disasters and other emergencies.

Students. In this study, pertains to the Senior High School students who will be the respondents of this research.

Chapter 2

REVIEW OF RELATED LITERATURE

This chapter presents related literature and studies about students' assessment of school-based emergency drills and their emergency preparedness. It discusses the implementation and quality of emergency drills, students' disaster-related knowledge and awareness, and reported readiness to respond to emergencies. The review provides a basis for examining whether students' assessments of school-based emergency drills are significantly related to their emergency preparedness.

Emergency Drills

School-based emergency drills provide students with opportunities to practice appropriate responses and become familiar with emergency procedures before an actual disaster occurs. However, the benefits of these drills depends not only on whether they are conducted but also on how they are planned and implemented.

Tipler et al. (2016) did a survey of 514 schools that took part in New Zealand's ShakeOut earthquake exercise. The study found that schools were more likely to do preparedness activities when given specific objectives. The research showed that having objectives makes emergency drills more effective. It also highlighted that clear goals help set the expectations and guide the practice sessions. Schildkraut and Nickerson (2020) examined lockdown drills and emergency-response training in an urban school district. Their study found that students and teachers felt more ready

after the training. Students and teachers reported confidence in handling the scenario. Classrooms showed implementation of the required lockdown procedures. However, not all the steps improved equally. This means that participation in drills does not always ensure that all instructions are understood or correctly followed. Even though these studies examined different kinds of emergencies, their findings mostly agreed that good planning and enough training help with being ready for emergencies. Thus, assessing the clarity of instructions and the organization and implementation of school-based emergency drills is important rather than considering the mere conduct of a drill as sufficient.

In the Philippine setting, school-based emergency drills are formally incorporated into the Department of Education's disaster risk reduction and management policies. DepEd Order No. 053, s. 2022 states that public schools must do unannounced earthquake and fire drills every first and third week of the month. It also requires school heads and School Disaster Risk Reduction and Management Coordinators that they must plan, do, and check these drills. Additionally, this policy states that these drills help learners learn the escape routes and show them the actions when an emergency occurs. It stresses the importance of proper planning, implementation, and monitoring of these activities. Consistent with this policy, Viado and Espiritu (2023) examined disaster-management program implementation in six public secondary schools in Zambales, including disaster drills and exercises, alongside students' preparedness. They found that most disaster-management activities were

implemented, although students' preparedness varied across areas. While their study did not directly measure students' assessments of drill quality, the findings indicate that the presence of disaster-management activities does not necessarily produce the same level of preparedness in every area. This supports the need to examine specific characteristics of drills rather than simply determining whether they are conducted. In addition, realism may be considered in terms of whether a drill provides meaningful practice of appropriate emergency procedures, rather than simply making the scenario more intense. Overall, the Philippine literature and policy support examining the quality of school-based emergency drills through students' perceptions of their clarity, organization and implementation, realism, and usefulness.

At the local level, studies conducted in Aklan provide additional context for understanding learners' disaster preparedness, although they do not specifically examine Senior High School students in Boracay. Bautista and Motus (2023), in a qualitative study involving ten junior high school learners from the Division of Aklan, identified the application of knowledge gained from drills as one aspect of learners' disaster preparation. This suggests that students may draw on their drill experiences when preparing for emergencies. However, the study focused on learners' lived experiences rather than their evaluations of the drills themselves. Similarly, Malonecio (2023) surveyed 249 higher-education students at Aklan State University and reported high disaster awareness, very high preparedness, and very high resiliency preparation, with significant associations among these variables. Although

this provides quantitative evidence of disaster preparedness in Aklan, the study did not specifically examine school-based emergency drills and involved higher-education rather than Senior High School students. Thus, although current local research demonstrates the importance of disaster preparedness among learners, there is not enough evidence about how learners evaluate the quality of emergency drills in schools. This gap supports examining students' assessments in terms of clarity of instructions, organization and implementation, realism, and perceived usefulness. Because emergency drills are designed to prepare learners to respond adequately to emergencies, next we present students' emergency preparedness.

Emergency Preparedness

School-based drills and emergency preparedness are closely related because drills provide students with opportunities to become familiar with safety procedures and practice appropriate responses. However, preparedness involves more than participating in an exercise. It may include understanding emergency procedures, recognizing appropriate protective actions, and feeling ready to respond when a hazard occurs. Students' reported readiness should also be distinguished from their demonstrated performance during an actual emergency.

White-Lewis et al. (2021) investigated disaster-preparedness education among students from under-resourced secondary schools in the United States. Using a quasi-experimental design, the researchers found statistically significant

improvements in 17 of 18 disaster-knowledge questions among students who received the educational intervention. The findings demonstrate that structured disaster education can improve students' knowledge of preparedness. However, the study primarily measured knowledge through questionnaires rather than students' performance during an actual emergency. Therefore, knowledge gains should not automatically be interpreted as proof of practical competence.

In the Philippine context, Mamon et al. (2017) examined disaster risk reduction knowledge among Grade 11 students at Las Piñas City National Senior High School–Doña Josefa Campus. Their findings indicated that students generally demonstrated disaster-related knowledge, preparedness and readiness, adaptation, and awareness, although their disaster risk perception was low. This suggests that positive knowledge and preparedness-related characteristics may coexist with gaps in how students perceive risks. Consequently, emergency preparedness should be examined through more than one dimension.

Lapada (2022) investigated disaster-related knowledge, preparedness and readiness, adaptation, risk perception, and awareness among 503 senior high school students at Eastern Samar State University. The results indicated that students generally demonstrated positive disaster-related characteristics, while differences were found across certain student groups and dimensions. Because the study was conducted in one school setting, its findings should be interpreted within that context rather than assumed to represent all Filipino students. Nevertheless, the study

provides relevant evidence that students' preparedness-related characteristics may vary and should be assessed rather than presumed.

Rogayan et al. (2022) studied disaster awareness and self-reported preparedness among 103 Grade 9 students from two public secondary schools in Zambales. The students reported high awareness of natural hazards and human-made disasters and considered themselves often prepared for different disasters. The researchers also found a significant moderate relationship between disaster awareness and preparedness. Although the study did not directly measure students' assessment of school-based drills, it provides evidence that awareness and perceived preparedness are related among secondary school students.

Viado and Espiritu (2023) likewise found that students in selected public secondary schools in Zambales were generally considered prepared for potential disasters, although preparedness varied across areas. Their findings associated preparedness with the implementation of broader disaster-management programs. In Aklan, Malonecio (2023) found that higher-education students reported high disaster awareness and very high preparedness and resiliency preparation, with significant associations among these variables. These local studies support the relevance of examining disaster preparedness, but they do not establish whether Senior High School students' assessments of school drills are related to their own reported readiness.

Taken together, the reviewed studies present emergency preparedness as a multidimensional concept involving knowledge, awareness, and readiness. White-Lewis et al. (2021) showed that disaster education can improve knowledge, while Mamon et al. (2017), Lapada (2022), and Rogayan et al. (2022) reported generally positive disaster-related characteristics alongside differences or gaps in particular dimensions. These findings support examining students' knowledge of emergency procedures, awareness of appropriate protective actions, confidence in responding, and perceived readiness. These are self-reported indicators and should not be treated as direct measures of how students would perform during an actual emergency.

Synthesis

A common theme across the reviewed literature is that emergency drills are an important part of school preparedness, but their value cannot be determined by frequency alone. Tipler et al. (2016) emphasized the importance of clear objectives for drills, while Schildkraut and Nickerson (2020, 2022) showed that drills and training can influence reported preparedness and students' perceptions in the context of lockdowns. Schildkraut et al. (2024) further highlighted that outcomes differ according to drill type and implementation. In the Philippines, DepEd Order No. 53, s. 2022 establishes requirements for regular unannounced earthquake and fire drills, while Viado and Espiritu (2023) found a relationship between broader disaster-management program implementation and preparedness. Together, these

sources support examining students' assessments of drill clarity, organization and implementation, realism, and perceived usefulness.

The literature also presents emergency preparedness as a combination of knowledge, awareness, and perceived readiness. White-Lewis et al. (2021) found improvements in disaster knowledge following an educational intervention, while Mamon et al. (2017), Lapada (2022), and Rogayan et al. (2022) reported generally positive disaster-related characteristics among Filipino students. Local studies also establish the relevance of preparedness in Aklan: Bautista and Motus (2023) identified the application of knowledge gained from drills among learners' disaster-preparation experiences, and Malonecio (2023) reported high awareness and preparedness among higher-education students. However, these studies differ in participants, methods, hazards, and measures, and not all directly examine school drills or Senior High School students.

Despite these contributions, the reviewed studies do not fully explain how Senior High School students at Boracay National High School assess the emergency drills conducted in their school or whether those assessments are related to their reported preparedness. Research on lockdown drills cannot automatically be generalized to drills for natural hazards, and findings about broad disaster-management programs do not identify the contribution of each drill characteristic. Moreover, reported preparedness is not the same as demonstrated

performance during an actual emergency. These gaps support examining students' assessments and preparedness within the specific context of the present study.

Therefore, the study entitled "From Drills to Skills: Students' Assessment of School-Based Emergency Drills and Their Emergency Preparedness" examines students' assessment of drills in terms of clarity of instructions, organization and implementation, realism, and perceived usefulness. It also examines their reported emergency preparedness in terms of knowledge of emergency procedures, awareness of appropriate protective actions, confidence in responding, and perceived readiness. Finally, it determines whether a significant relationship exists between the two variables among selected Senior High School students at Boracay National High School. Using a descriptive-correlational design, the study investigates an association and does not assume that positive assessments cause greater preparedness.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall. https://books.google.com/books?id=89mfzwEACAAJ

Bautista, A. B., & Motus, R. H. (2023). Lived experiences of learners during disaster: Basis in formulating policies on disaster risk reduction and management. *Industry and Academic Research Review, 1*(1), 80–84. https://iiari.org/journal/article/iarr/lived-experiences-of-learners-during-disaster-basis-in-formulating-policies-on-disaster-risk-reduction-and-management/

Bündnis Entwicklung Hilft, & Institute for International Law of Peace and Armed Conflict. (2026). *WorldRiskReport 2026*. https://weltrisikobericht.de/worldriskreport/

Department of Education. (2019, July 25). *DepEd, BFP host Fire Square Road Show*. https://www.deped.gov.ph/2019/07/25/deped-bfp-host-fire-square-road-show/

Department of Education. (2022, December 9). *Mandatory unannounced earthquake and fire drills in schools* (DepEd Order No. 53, s. 2022). https://www.deped.gov.ph/wp-content/uploads/2022/12/DO_s2022_053.pdf

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Lapada, A. A. (2022). Disaster risk reduction knowledge among Filipino senior high school students. *Journal of Social Sciences Review, 2*(1), 56–73. https://jssr.com.pk/index.php/jssr/article/download/27/22/299

Malonecio, M. G. (2023). Higher education students' disaster awareness, preparedness, and resiliency preparation. *Universal Journal of Educational Research, 2*(2), 150–159. https://zenodo.org/records/7969161

Mamon, M. A. C., Suba, R. A. V., & Son, I. L., Jr. (2017). Disaster risk reduction knowledge of Grade 11 students: Impact of senior high school disaster education in the Philippines. *International Journal of Health System and Disaster Management, 5*(3), 69–74. https://doi.org/10.4103/ijhsdm.ijhsdm_16_17

PAGASA. (n.d.). *Tropical cyclone information*. https://pagasa.dost.gov.ph/climate/tropical-cyclone-information

Republic Act No. 10121. (2010). *Philippine Disaster Risk Reduction and Management Act of 2010*. https://lawphil.net/statutes/repacts/ra2010/ra_10121_2010.html

Rogayan, D., Cuarto, R. M. D., & Ocsan, M. L. A. (2022). Are ninth-grade students aware and prepared when disaster strikes? *Journal of Science and Education, 2*(2), 65–80. https://doi.org/10.56003/jse.v2i2.96

Schildkraut, J., Greene-Colozzi, E. A., & Nickerson, A. B. (2024). Emergency preparedness drills for active and mass shootings in schools. *Current Psychiatry Reports, 26*(6), 304–311. https://doi.org/10.1007/s11920-024-01502-7

Schildkraut, J., & Nickerson, A. B. (2020). Ready to respond: Effects of lockdown drills and training on school emergency preparedness. *Victims & Offenders, 15*(5), 619–638. https://doi.org/10.1080/15564886.2020.1749199

Schildkraut, J., & Nickerson, A. B. (2022). Effects of lockdown drills on students' fear, perceived risk, and use of avoidance behaviors: A quasi-experimental study. *Criminal Justice Policy Review, 33*(8), 787–813. https://doi.org/10.1177/08874034221089867

Tipler, K. S., Tarrant, R. A., Johnston, D. M., & Tuffin, K. F. (2016). New Zealand ShakeOut exercise: Lessons learned by schools. *Disaster Prevention and Management: An International Journal, 25*(4), 550–563. https://doi.org/10.1108/DPM-01-2016-0018

Viado, A. C., & Espiritu, J. A. (2023). Extent of disaster management program implementation and preparedness level in selected public secondary schools in Zambales, Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research, 4*(7), 2511–2524. https://doi.org/10.11594/ijmaber.04.07.28

White-Lewis, S., Beach, E., & Zegers, C. (2021). Improved knowledge of disaster preparedness in underrepresented secondary students: A quasi-experimental study. *Journal of School Health, 91*(6), 490–498. https://doi.org/10.1111/josh.13023

Extensive research has been conducted on the social landscape regarding student preparedness, specifically, preparedness in relation to emergency drills conducted in educational institutions.

Findings:

Vocab: exigency

synthesize the followimh 3-4 paragraphs:

Ideas(interweave similar and differing results briefly) “a prevailing theme that rose ” “a thorough examination/evaluation of the literature, }” what ensued from the thorough examination of related literature “ yet, if we accept this premise”

“ it is here, thrn” “ beneath the veneer of objective e” ultimately

findings suggest that evaluating emergency drills should involve examining their quality and implementation rather than focusing solely on their frequency. Although their study focused on school drill performance rather than students' perceptions alone, it provides a useful basis for understanding why the organization, realism, and usefulness of drills are important considerations when assessing these activities.

These policies establish the importance of conducting emergency drills to familiarize learners with appropriate safety procedures and responses. However, while the policies provide guidelines for implementing drills, students' assessment of these activities also requires consideration of how learners perceive the clarity, organization, realism, and usefulness of the exercises they experience.

Chapter 3

RESEARCH METHODOLOGY

This section presents the procedures and methods used in conducting the study. It described how the research was planned and implemented, including the research design, locale of the study, respondents, sample size and technique, research instruments, data-gathering procedure, and data analysis. These methods were chosen to ensure that the data were reliable and appropriate.

Research Design

The research employed a correlational research design. This study is relevant in establishing the relationship between the numeracy level of students and their academic performance. According to Bhandari (2021), a correlational research design is a form of quantitative research that provides information on predicting an outcome or explaining the statistical relationship between variables conveniently. This study will enable the researcher to establish whether students who are not whether students who have low levels of numeracy are expected to perform poorly in their General Mathematics subject, and whether students who have high levels of numeracy perform better in General Mathematics. This research design will enable the study to provide relevant information that can be used as a basis for the development of strategies and interventions to enhance both numeracy level and academic achievement among the senior high school students.

Locale of the Study

This study was conducted at Boracay National High School, located in Brgy. Balabag, Boracay Island, Malay, Aklan. Boracay National High School is currently headed by Mr. Mc John F. Gelito, Master Teacher I/Teacher-in-Charge, and is composed of 52 dedicated teachers from Junior High School and 12 from the Senior High School department, a total of 64 teachers. The school offers both Junior High School and Senior High School programs, with strands under the Academic Track such as Science, Technology, Engineering, and Mathematics (STEM), Accountancy, Business, and Management (ABM), and the General Academic Strand (GAS), as well as specializations under the Technical-Vocational-Livelihood (TVL) Track including Food and Beverage Services NC II, Bread and Pastry Production NC II, and Local Guiding. At present, Boracay National High School serves students from Grade 7 to Grade 12 with a total of 277 students from Grade 11.



Figure 2: The map of Boracay Island that illustrates the study's locale

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Source: Municipality of Malay

Respondents of the Study

The study's respondents were 85 Grade 11 students of Boracay National High School enrolled in the school year 2025-2026. These students were chosen from the three sections: GAS Hydra, GAS Aquarius, and GAS Cassiopeia. Twenty-eight students were randomly chosen from GAS Hydra and GAS Aquarius, while twenty-nine students were chosen from GAS Cassiopeia. The study employed simple random sampling to select the respondents, giving an equal chance of selection and ensuring that the sections were well represented in the study.

Sample Size and Sampling Techniques

This study used the Slovin's Formula to select a sample of eighty-five (85) Grade 11 students from General Academic Strand (GAS). To select the respondents, the researchers applied simple random sampling technique. This ensures that the sample represents the population equally, making the study's results are reliable and accurate (Dhanya, 2024).

Research Instrument

The researchers used the Academic Record Analysis Form as the primary instrument for obtaining a necessary list of quantitative data. Additionally, this instrument was used to record and classify results of the respondents, along with their

overall performance in General Mathematics. The numeracy assessment utilized in the study is a numeracy test adapted from Khan Academy–which is frequently conducted to Grade 11 students and covers simple mathematical concepts such as numbers, functions, ratios and basic statistics. It emphasizes the use of essential mathematical operations, such as addition, subtraction, multiplication, and division.

Furthermore, numeracy level was measured using the respondents' raw scores, which are then converted into percentage scores and sorted into corresponding numeracy levels (such as advanced, proficient, approaching proficiency, developing, and beginning) using appropriate informative statistical parameters, including frequency, percentage, and mean. The students' final grades in General Mathematics is measured through the academic performances of the students. Whereas, these grades depict the students' overall performance in mathematical content that consists of statistical concepts, mathematical functions, and problem-solving skills throughout the semester. Lastly, each respondent is assigned a Respondent Code (R1, R2, R3, etc.). The collected data is examined using statistical methods to depict the relationship of numeracy level and academic performance. The researchers confirmed in which the findings reflect measurable, objective, and statistical evidence by utilizing the collected data and final grades, rather than relying on assumptions or unverified beliefs.

Part I. Students’ Numeracy Level

Raw Score	Numeracy Level	Description
17- 20	Very High	Highly Numerate
13- 16	High	Above Average Numeracy
9- 12	Moderate	Average Numeracy
5- 8	Low	Needs Improvement
0- 4	Very Low	Seriously Needs Intervention

Part II. Students' Grade in General Mathematics

Grade Range	Interpretation
90-100	Outstanding
85-89	Very Satisfactory

	80- 84	Satisfactory
	75-79	Fairly Satisfactory
23	Below 75	Did Not Meet Expectations

Validity of the Instrument

In order to establish the validity of the instrument, the researchers conducted expert evaluation of the form, which included the feedback of the Research Teachers and English Teachers at the senior high school. The experts evaluated the content of the form in terms of clarity, appropriateness, and accuracy in relation to the information being sought. The content validity of the Academic Record Analysis form was also established through the feedback of the validators. The form was found to be accurate in measuring the constructs of the students' numeracy level and academic performance in Grade 11 GAS.

Data Gathering Procedure

The data gathered was thoroughly validated to ensure its completeness and accuracy. Once the data were complete and finalized, the researchers started the statistical analysis to determine the relationship between the numeracy level and the academic performance of the respondents. Descriptive statistical methods such as

frequency, percentage, mean, and standard deviation were utilized in this process. To identify the relationship between the variables, the Pearson's correlation coefficient or r-value was used. The conclusion and recommendations of the study were based on the findings, which provided valuable information regarding the mathematical skills of the students and its impact on their academic performance.

Data Analysis Procedure

The study analyzed data to determine the relationship of the students' numeracy levels and their academic performance. To describe the data, the study used descriptive statistics such as frequency, percentage, mean, and standard deviation. The data analysis helped determine whether there is a significant relationship between numeracy levels and academic performance. The results that were created became the

 f the study's conclusions and recommendations.

Ethical Considerations

The researchers strictly followed the ethical considerations in conducting the study. The Informed consents of the respondents were obtained and the confidentiality of the results were achieved through a letter submitted to their respective advisers. The advisers were requested to sign the letted that held information about the nature and objectives of the study. The researchers also ensured that the respondents were not physically and psychologically harmed.

Chapter 4

PRESENTATION, ANALYSES, AND INTERPRETATION OF DATA

This section represents the results of the findings and interpretation of the collected data.

Table 1.

Students' Numeracy Level

Score in Numeracy Test/ Description	Frequency	Percentage
17- 20 (Very High/ Highly Numerate)	10	12
13- 16 (High/ Above Average Numeracy)	29	34
9- 12 (Moderate/ Average Numeracy)	28	33
5- 8 (Low/ Needs Improvement)	17	20
0-4 (Very Low/ Seriously Needs Intervention)	1	1
Total	85	100
Mean	11.86	
26	3.681	
Description	Moderate or Average Numeracy Level	

From the table, the distribution of students based on their scores in the numeracy test is presented. From the 85 respondents, most students (34%) scored between 13-16, which corresponds to a High or Above Average Numeracy level. This is closely followed by students who scored between 9-12, which represents a Moderate or Average Numeracy level. On the other hand, 20% of the students scored between 5-8, which corresponds to a Low or Needs Improvement level. Only 1% of the students scored between 0-4, which represents a Very Low or Seriously Needs Intervention level. Only a few students (12%) scored very high between 17-20, which

signifies a Highly Numerate level. The mean score is 11.86 with a standard deviation of 3.681, which indicates that students have a moderate or average numeracy level. This indicates that while many students have developed basic numeracy skills, a large number of students still need to be assisted to enhance their numerical knowledge and problem-solving skills.

Table 2.

Students' Level of Academic Performance in General Mathematics

Grade Range	Frequency	Percentage
90- 100 (Outstanding)	31	36
85-89 (Very Satisfactory)	35	42
80-84 (Satisfactory)	12	14
75-79 (Fairly Satisfactory)	7	8
Below 75 (Did Not Meet Expectations)	0	0
Total	85	100
Mean	87.73	
SD	4.854	
Description	Very Satisfactory	

The table above displays the distribution of the respondents' grades in General Mathematics. Majority of students (42%) have grades between 85-89, which means Very Satisfactory. This is followed by 36% of students who garnered grades between 90-100, which means Outstanding. On the other hand, 14% of students were categorized as Satisfactory with grades between 80-84, while 8% were in the Fairly Satisfactory stage with grades between 75-79. No students garnered a grade below 75. The overall mean score is 87.73 with a standard deviation of 4.854, indicating that students generally perform Very Satisfactory in General Mathematics.

These results support the study of Alo (2025), which revealed that Filipino students generally exhibit a moderate level of proficiency in mathematics, especially in identifying the value of mathematics, which is an acceptable factor in achieving satisfactory academic performance. In the same way, the research of Jumangit and Miranda (2022) revealed that students with moderate self-concept in mathematics generally have average to proficient levels of academic performance. The result also supports the study of Antis Publisher Repository (2025), which revealed that external and internal factors, such as interest, motivation, and personal perception of the students, are very important in the academic performance of students in mathematics.

Table 3.

Correlation Between Students' Numeracy Level and General Mathematics Subject

Indicators	r-value	Strength	Significant value	Interpretation	Decision
Students' Numeracy Level and Gen. Math Performance	0.406	Moderate Positive Relationship	0.000	Statistically significant	Reject the null hypothesis

The table shows the relationship between students' numeracy level and academic performance in General Mathematics. The R-value is 0.406 which indicates a moderate positive relationship between the variables. The result is statistically significant with value of 0.000; therefore, the null hypothesis is rejected. This means that students with higher numeracy levels tend to achieve higher grades in General Mathematics, while students with lower numeracy levels tend to achieve suboptimal grades in the subject.

This supports the study of Malabayabas et al.,(2024), who found a significant relationship of numeracy and problem-solving skills of students—emphasizing the role of numeracy as a predictor of academic success. Moreover, the moderate correlation is supported by the findings of Neliti (2022) and Antis Publisher Repository (2025), which stated that academic achievement is not solely affected by cognitive skills but also by factors such as motivation, self-concept, and instructional quality. This supports that numeracy is an important factor of academic achievement when combined with other personal and environmental factors.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This section presents the summary of the findings, the conclusion formed, and the recommendations offered.

Summary of Findings

After a thorough analysis of the data, the following findings were established:

1. The findings show that the majority of Grade 11 GAS students scored below the level of expected proficiency in the Numeracy Level Test. Specifically, ten students scored between 17 and 20, 29 students scored between 13 and 16, 28 students scored between 9 and 12, and 17 students scored between 5 and 8. The mean score was 11.86, with a standard deviation of 3.681, indicating a moderate level of numeracy achievement among the respondents.
2. Based on the first semester performance, 31% of the students scored between 90 and 100, 35% scored between 85 and 89, and 12% scored between 80 and

84. On the other hand, 7% of the students scored between 75 and 79. The mean score was 87.23, with a standard deviation of 4.854. Based on the data, the academic performance of the students can be categorized as "Very Satisfactory." None of the students scored below 75, indicating that all of the respondents performed satisfactorily in General Mathematics.

3. The value of the correlation coefficient (r = 0.406) and the significant value (p = 0.000) show that there is a moderate positive relationship between the level of numeracy and academic performance of Grade 11 GAS students. This result implies that students who possess higher levels of numeracy are likely to attain better academic performance.

4. Based on the results, the null hypothesis which states that there is no significant relationship between the numeracy level and academic performance was rejected.

Conclusions

In connection of these findings, the following conclusions are drawn:

1. Students' Numeracy Level is Generally Adequate: The numeracy level of the respondents were commonly moderate to high, with majority of students classified under average and above-average categories. Only a minor number of students were identified to have low or very low numeracy skills. Suggesting that most students retain sufficient mathematical knowledge.

However, certain students still need further assistance to advance their numeracy.

2. The findings showed that the academic achievement was generally high, with largely of students achieving a Very Satisfactory to Outstanding performance level in General Mathematics. Classroom participation and effective teaching methods may help students improve their academic performance. This outcome suggests that students performed well overall, since mostly received at least a passing grade.
3. The findings indicated a moderately positive relationship between the students' numeracy levels and their academic performance in General Mathematics, which means that students with higher numeracy levels attained higher grades, while those with lower numeracy levels performed less.

Recommendations

Based on the findings, the following recommendations were formed:

1. It is recommended that students identify where they lack in numeracy skills and seek help when needed. This can be achieved through peer tutoring, additional practice sessions, online educational resources, or by asking their

teachers for assistance. This can lead to improved understanding of concepts and significantly improve their academic performance.

2. Students can also adopt effective learning strategies suited for them. This can be achieved by setting personal educational goals, persistent practice, error analysis, and using learning strategies that promote critical thinking and problem-solving.
3. Schools may offer workshops or tutoring programs for students with low numeracy skills. By developing supportive programs that offer individual tutoring or group workshops, students who need additional support can benefit. This can help develop strong mathematical concepts, which can have a subsequent positive impact on academic performance.
4. It is recommended that parents make use of the numeracy performance data in their educational approach. This could include extending the numeracy concepts at home through activities such as time management and problem-solving, which may help improve academic performance.

References

Alo, R. G. (2025, August). *Numerical literacy orientation and mathematical problem-solving skills among senior high school students.* Asia Pacific Journal

of Educational Technologies Psychology and Social Sciences, 1(2), 1–15. https://doi.org/10.70847/628900

Ariani, Y., Suparman, Y., Helsa, Y., Zainil, M., & Rahmatina. (2024). I*CT-based or -assisted mathematics learning and numerical literacy: A systematic review and meta-analysis.* International Journal of Information and Education Technology, 14(3), 382-397. https://doi.org/10.18178/ijiet.2024.14.3.2060

Arifin, N. N. B. Z., Chuan, T. C., & Wee, S. Y. (2026). A review of the factors influencing students' academic performance in mathematics in higher education contexts. International Journal of Statistics and Applied Mathematics, 11(1), 67–74. https://doi.org/10.22271/maths.2026.v11.i1a.2243

Arthur, Y. D., Addo, S. A., & Annan, J. (2015). *Student mathematics interest in Ghana: The role of parent interest, gender, basic school attended and fear of basic school mathematics teacher.* Advances in Research, 5(5), 1–8. https://doi.org/10.9734/AIR/2015/19889

Atienza, K. A. T. (2024, November 14). *Filipino students show high level of math anxiety* — PISA. BusinessWorld Online. https://www.bworldonline.com/top-stories/2024/11/14/634783/

Balansag, J. M., et al. (2024). Mathematical skills and academic performance of Grade 11 students in Southern Negros Occidental. European Journal of Education Studies. https://oapub.org/edu/index.php/ejes/article/view/6344

Bego, C. R., Lyle, K. B., Ralston, P. A., & Starr, T. L. (2024). *Single-paper meta-analyses of the effects of spaced retrieval practice in nine introductory STEM courses: Is the glass half full or half empty?* International Journal of STEM Education, 11(1), 9. https://doi.org/10.1186/s40594-024-00468-5

Campanilla, N. S. (2024). *Exploratory analysis of learners' motivation on learning mathematics in Philippines.* Journal of Social, Humanity, and Education, 5(1), 37–59. https://doi.org/10.35912/jshe.v5i1.2115

Capuno, R., Necesario, R., Etcuban, J. O., Espina, R., Padillo, G., & Manguilimotan, R. (2019). *Attitudes, study habits, and academic performance of junior high school students in mathematics.* International Electronic Journal of Mathematics Education, 14(3), 547–561. https://eric.ed.gov/?id=EJ1227082

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research (4th ed.).* Pearson Education. https://books.google.com/books/about/Educational_Research.html?id=IXcOAQAAMAAJ&source=kp_book_description

Danuri, Waluya, Sugiman, & Sukestiyarno. (2023). *Numerical literacy and math self-concept of children with special needs in inclusive elementary schools.* International Journal of Instruction, 16(3), 1095–1112. https://doi.org/10.29333/iji.2023.16358a

Derequito, K. G., Derequito, K. G., Laporca, E. M. P., Verallo, A. J. C., & Ferrer, N. J. M. (2025). *Metacognitive awareness and numerical proficiency of Bachelor of*

35 *Secondary Education major in Mathematics*. 8(04), 498–519. https://repository.antispublisher.my.id/id/eprint/285/1/5474-Article Text-14106-1-10-20250602.pdf

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., Japel, C. (2007). *School readiness and later achievement.* Developmental Psychology, 43(6), 1428–1446. https://doi.org/10.1037/0012-1649.43.6.1428

GOVPH. (2013). Implementing Rules and Regulations (IRR) of Republic Act No. 10533 Otherwise Known as the Enhanced Basic Education Act of 2013. deped.gov.ph. https://www.deped.gov.ph/wp-content/uploads/2013/09/DO_s2013_43.pdf

Hikmawati, F., & Saifullah, S. (2022). *The effect of problem-based learning on students' mathematical creative thinking ability.* Proceedings of the International University Symposium on Humanities and Arts (INUSHARTS 2020), 247–253. https://doi.org/10.2991/assehr.k.211110.037Lomibao, L. S.,

Inge Molenaar, Jelmer E. W. van der Kleij, & Daphne B. P. Timmers (2021). The role of numeracy in academic achievement: The impact of students' numerical skills on learning outcomes. Studies in Educational Evaluation, 70, 101060. https://doi.org/10.1016/j.stueduc.2021.101060

Kangan Institute. (2021). *The Imporatance of Literacy and Numeracy Skills.* Kangan Institute Blog Tafe Victoria.

https://www.kangan.edu.au/study-with-us/our-blog/the-importance-of-literacy-and-numeracy-skills

Jordan, N. C., Kaplan, D., Ramineni, C., & Locuniak, M. N. (2009). *Early math matters: Kindergarten number competence and later mathematics outcomes.* Developmental Psychology, 45(3), 850–867. https://doi.org/10.1037/a0014939

36 cco, M. M. M., & Feigenson, L. (2008). *Individual differences in non-verbal number acuity correlate with maths achievement.* Nature, 455(7213), 665–668. https://doi.org/10.1038/nature07246

Mindanao State University. (2020). Mathematical problem-solving skills and academic performance of secondary students. https://www.msu.edu.ph

Miñoza, J., Sala, R., Salera, A., Roldan, L., & Dela Peña, H. K. (2025). *Literacy and numeracy needs of students: A teacher's perspectives*. International Journal on Studies in Education (IJonSE), 7(3), 468–481. https://doi.org/10.46328/ijonse.1939

OECD. (2019). P*ISA 2018 results: What students know and can do.* OECD Publishing.

https://www.oecd.org/pisa/publications/pisa-2018-results-volume-i-5f07c754-en.htm

Peteros, E., Gamboa, A., Etcuban, J. O., Dinauanao, A., Sitoy, R., & Arcadio, R. (2019). *Factors affecting mathematics performance of junior high school*

students. International Electronic Journal of Mathematics Education, 15(1), em0556. https://doi.org/10.29333/iejme/5938

Pitogo, S. D., & Oco, R. M. (2023). *Pupils' numeracy skills and mathematics performance.* Southern de Oro Philippines College. https://www.researchgate.net/publication/373110905_Pupils'_Numeracy_Skills_and_Mathematics_Performance

37 ez, G., Chang, H., Maloney, E. A., Levine, S. C., & Beilock, S. L. (2016). *On the relationship between math anxiety and math achievement.* PLoS ONE, 11(10), e0163696. https://doi.org/10.1371/journal.pone.0163696 Halberda, J.,

Salvo, C. M. B., & Ucang, J. T. (2025). The relationship between comprehension skills and academic performance in mathematics. International Journal of All Research Writings, 7(5), 146–156. https://www.academia.edu/145304737/THE_RELATIONSHIP_BETWEEN_COMPREHENSION_SKILLS_AND_ACADEMIC_PERFORMANCE_IN_MATHEMATICS

Samia, J. A. T. (2024). *Pupils' reading and numerical literacy in the Pre-COVID-19 pandemic and during the pandemic with modular and face-to-face instructions.* Multidisciplinary International Journal of Research and Development, 3(3), 59–68. https://www.mijrd.com/papers/v3/i3/MIJRDV3I30005.pdf

Santia, I., & Handayani, A. D. (2022). *Exploring students' numerical literacy on statistical problem-solving in Indonesia. Quality:* Jurnal Pendidikan dan Pembelajaran, 3(4). https://doi.org/10.58429/qaj.v3n4a181

Stacey, K. (2011). *The PISA view of mathematical literacy in Indonesia*. Journal on Mathematics Education, 2(2). https://doi.org/10.22342/jme.2.2.746.95-126

Utami, R. A. S., Widodo, J. S., Siagian, T. H., & Ragamustari, S. K. (2021, November 21). *Numerical literacy among senior high school students at Alumni Course Institution in Jakarta Branch*. In INUSHARTS 2020 (pp. 247–253). Atlantis Press.

Waluya, S. B. (2023). *Numerical literacy and math self-concept of children with special needs in inclusive elementary schools.* International Journal of Instruction, 16(3), 1015–1034. https://www.e-iji.net/dosyalar/iji_2023_3_58.pdf

Yap, D. T., & Futalan, M. C. Z. (2025). *The influence of problem-solving skills and prior achievement on student performance in a literacy and numeracy program.* Journal of Instructional Practices. https://doi.org/10.69569/jip.2025.262

Appendix A

Request Letter to the School Principal

Republic of the Philippines
Department of Education
Region VI- Western Visayas
Division of Aklan
District of Malay
BORACAY NATIONAL HIGH SCHOOL
Balabag, Malay, Aklan

January 5, 2026

MC JOHN F. GELITO
MT-I/ Teacher-in-Charge
Boracay National High School

Sir:

Greetings!

I am a student- researcher of Boracay National High School. I am presently working together with my members with a research study titled, Count to Success: Examining the Correlation Between Numeracy Level and Academic Performance of Grade 11 Students, as a requirement in the subject Research Report for the 2nd Semester, School Year 2025-2026. This study aims to identify whether there's a connection between numeracy level and academic performance of Grade 11 students at Boracay National High School.

In connection with this, I am respectfully asking permission to conduct the said study starting January 5- 16, 2026. The respondents of the study will be eighty-five Grade 11 GAS students of Boracay National High School.

Your favorable approval on this matter will surely contribute to the success of this study.

Thank you.

Respectfully yours,

NICOLE G. GREGORIO
Researcher

Recommending Approval:

JANE O. ZASPA
Research Adviser

Approved:

MC JOHN F. GELITO
MT-I/ Teacher-in-Charge

Appendix B

Informed Consent

January 6, 2026

ARNOLD Z. ROGAN
Adviser
Boracay National High School

Subject: Request for Permission to Gather Data for Research

Dear Sir:

Good day!

We are Grade 12 students currently conducting our research entitled **"Count to Success: Examining the Correlation Between Numeracy Level and Academic Performance of Grade 11 Students".** This study aims to identify whether there's a connection between the numeracy level and academic performance of grade 11 students in Mathematics subject.

In line with this, we humbly request permission to gather data from your students through the use of numeracy test and academic record analysis form. The information that will be collected will be used solely for academic purpose and will be treated with strict confidentiality.

We hope for your kind consideration and approval of our request. Your cooperation will greatly contribute to the success of our research.

Thank you very much and we look forward to your favorable response.

Respectfully yours,

NICOLE G. GREGORIO
Group Leader

Noted by:

JANE O. ZASPA

Research Adviser

40

Approved by:

ARNOLD Z. ROGAN
Adviser

Appendix C

Questionnaire

Academic Record Analysis Form

Respondent's Name	Quarter 1 Grade	Quarter 2 Grade	Average	Grade Description

Numerical Literacy Test for Grade 11

(Platform-based Assessment Instrument from Khan Academy)

Name: _____

Instructions: Please read each question carefully and write the letter of your answer before the number. All information gathered will be treated with confidentiality and used for academic purposes only.

_____1. If $2x + 3 = 17$, what is the value of x?
a. The value of x is 5.
b. The value of x is 9.
c. The value of x is 11.
d. The value of x is 7

_____2. What is 0.25 expressed as a fraction in simplest form?
a. 0.25 as a fraction is $\frac{1}{2}$.
b. 0.25 as a fraction is $\frac{1}{4}$.
c. 0.25 as a fraction is $\frac{2}{5}$.
d. 0.25 as a fraction is $\frac{3}{8}$.

_____3. Find the mean of the numbers: 6,8,10.
a. The mean is 8.
b. The mean is 6.
c. The mean is 10.
d. The mean is 12.

_____4. If $3y = 12$, what is the value of y?
a. The value of y is 4.
b. The value of y is 2.
c. The value of y is 6.
d. The value of y is 8.

_____5. What is the next number in the sequence: 2,4,8,16?
a. The next number is 30.
b. The next number is 36.
c. The next number is 40.
d. The next number is 32.

_____6. What percentage of 50 is 10?
a. The percentage is 10%.
b. The percentage is 25%.
c. The percentage is 20%.
d. The percentage is 40%.

_____7. If $a^2 = 25$, what is the value of a (consider only positive values)?
a. The value of a is 3.
b. The value of a is 7.
c. The value of a is 9.
d. The value of a is 5.

_____8. Find the median of the set: 3,7,11.
a. The median is 5.
b. The median is 9.

c. The median is 11.
d. The median is 7.

_____9. If $2x - 1 = 5$, what is the value of x?
a. The value of x is 2.
b. The value of x is 4.
c. The value of x is 3.
d. The value of x is 5.

_____10. What is the probability of rolling a 4 on a fair six-sided die?
a. The probability is $\frac{1}{6}$.
b. The probability is $\frac{1}{3}$.
c. The probability is $\frac{1}{2}$.
d. The probability is $\frac{1}{4}$.

_____11. If $x^3 = 8$, what is the value of x?
a. The value of x is 2.
b. The value of x is 4.
c. The value of x is 6.
d. The value of x is 8.

_____12. Find the range of the set: 4,8,12.
a. The range is 6.
b. The range is 8.
c. The range is 10.
d. The range is 12.

_____13. If $x - 4 = 5$, what is the value of x?
a. The value of x is 6.
b. The value of x is 12.
c. The value of x is 15.
d. The value of x is 9.

_____14. What is $\frac{3}{5}$ as a decimal?
a. The decimal is 0.4.
b. The decimal is 0.8.
c. The decimal is 0.3.
d. The decimal is 0.6.

_____15. If $5x = 10$, what is the value of x?
a. The value of x is 3.
b. The value of x is 4.
c. The value of x is 5.
d. The value of x is 2.

_____16. If $x^2 - 4 = 12$, what is the value of x (consider only positive values)?
a. The value of x is 4.
b. The value of x is 2.
c. The value of x is 6.
d. The value of x is 8.

_____17. If $2x = 10$, what is the value of x?
a. The value of x is 5.
b. The value of x is 3.
c. The value of x is 7.
d. The value of x is 9.

_____18. If $x + 2 = 8$, what is the value of x?
a. The value of x is 6.
b. The value of x is 4.
c. The value of x is 8.
d. The value of x is 10.

_____19. If $x^2 = 9$, what is the value of x (consider only positive values)?
a. The value of x is 2.
b. The value of x is 4.
c. The value of x is 3.
d. The value of x is 5.

_____20. If $x - 3 = 5$, what is the value of x?
a. The value of x is 6.
b. The value of x is 8.
c. The value of x is 10.
d. The value of x is 12.

Appendix D

Validation of Instrument

Republic of the Philippines
Department of Education
Region VI- Western Visayas
Division of Aklan
District of Malay
BORACAY NATIONAL HIGH SCHOOL
Balabag, Malay, Aklan

CERTIFICATE OF VALIDATION

This is to certify that the instrument for the research study titled **Count to Success: Examining the Relationship Between Numeracy Level and Academic Performance of Grade 11 Students** prepared and submitted by Section Prudence, Group 1 of Boracay National High School has been evaluated and found to conform to the required standard for scholarly research.

In view thereof, we, the validators, affix our signatures below as confirmation of the examination and approval we have made hereto.

MC JOHN F. GELITO
Validator

ARNOLD Z. ROGAN
Validator

GRECHELLE G. BELEJERDO
Validator

Appendix E

Pictures













January 27, 2026. Conducting a Numeracy Test

Curriculum Vitae

47



Name: Allyssa C. Aguirre

Address: Dumatad, Tangalan, Aklan Civil

Status: Single

Date of Birth: July 1, 2008

Birthplace: Kalibo, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Tangalan National High School

Tondog, Tangalan, Aklan

2020-2024

With Honors

Elementary: Tangalan Elementary School

Poblacion, Tangalan, Aklan

2014-2020

With Honors

48

Name: Angel Jamila T. Escarilla



Address: Tambisaan, Malay, Aklan

Civil Status: Single

Date of Birth: April 13, 2008

Birthplace: Caticlan, Malay, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Manoc-Manoc National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: River of Knowledge Foundation Academy

Bantud, Malay, Aklan

2014-2020

Valedictorian

49

Name: Bryan T. Carino



Address: Manoc-Manoc, Malay, Aklan

Civil Status: Single

Date of Birth: April 10, 2008

Birthplace: Balabag, Malay, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

With Honors

50



Name: Cyrell May Labandero

Address: Tulubhan, Manoc-Manoc, Malay, Aklan

Civil Status: Single

Date of Birth: May 9, 2008

Birthplace: Kabalalahan Agusan, Cagayan de Oro City, Misamis Oriental

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Manoc-Manoc National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: Manoc- Manoc Elementary School

Manoc-Manoc, Malay, Aklan

2014-2020

With Honors

51

Name: Dhan Ronie G. Fuentes



Address: Balabag, Malay, Aklan

Civil Status: Single

Date of Birth: June 24, 2008

Birthplace: Kalibo, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Mountain of God Academy Inc.

Yapak, Malay, Aklan

2020-2024

With Honors

Elementary: Mountain of God Academy Inc.

Yapak, Malay, Aklan

2014-2020

With Honors

Name: Edz M. Umambong

Address: Balabag, Malay, Aklan

Civil Status: Single

Date of Birth: August 29, 2008

Birthplace: Balabag, Malay, Aklan

Age: 17



Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

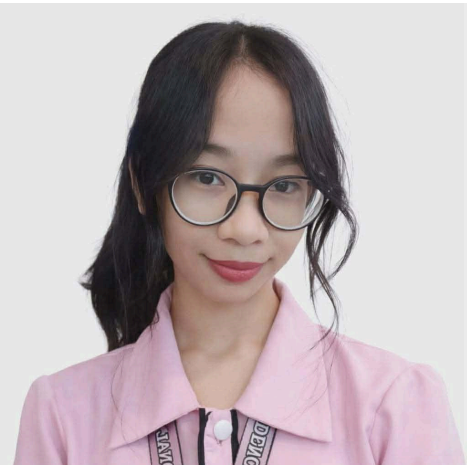
With Honors

Name: Glenrie H. Tocjayao

Address: Hagdan, Yapak, Malay, Aklan

Civil Status: Single

Date of Birth: January 5, 2008



Birthplace: Ibajay, Panay, Aklan

Age: 18

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors

\Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

With Honors

Name: Lenard Silvino B. Ampongan

Address: Balabag, Malay, Aklan



Civil Status: Single

Date of Birth: November 23, 2008

Birthplace: Caticlan, Malay, Aklan

Age: 16

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

With Honors



Name: Nhadzmira I. Mustapha

Address: Manoc-Manoc, Malay, Aklan

Civil Status: Single

Date of Birth: August 26, 2008

Birthplace: Kalibo, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Manoc-Manoc National High School

Manoc-Manoc, Malay, Aklan

2020-2024

With Honors

Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

With Honors

56



Name: Nicole G. Gregorio

Address: Balabag, Malay, Aklan

Civil Status: Single

Date of Birth: March 29, 2008

Birthplace: Balabag, Malay, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

Valedictorian

Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

Valedictorian

57



Name: Vohn Daniel V. Gonzales

Address: Yapak, Malay, Aklan

Civil Status: Single

Date of Birth: March 2, 2008

Birthplace: Kalibo, Malay, Aklan

Age: 18

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: Balabag Elementary School

Balabag, Malay, Aklan

2014-2020

With Honors

58

Name: Zoe S. Tupas



Address: Balabag, Malay, Aklan

Civil Status: Single

Date of Birth: October 25, 2008

Birthplace: Caticlan, Malay, Aklan

Age: 17

Educational Background:

Senior High School: Boracay National High School

Balabag, Malay, Aklan

2024 – present

Strand: STEM (Science, Technology, Engineering and Mathematics)

Junior High School: Boracay National High School

Balabag, Malay, Aklan

2020-2024

With Honors

Elementary: Bloomfield Integrated Academy

Balabag, Malay, Aklan

2014-2020

With Honors